

REMARKS

Claim Rejections Under 35 U.S.C. § 112

The examiner rejected claims 1-17 under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement. More specifically, the examiner indicated that the specification does not have support for the combination of “first and second detectors to detect respectively a first and second detection beam output from the sample that result(s) from the first and second incident electron beams impinging on the first and second portions of the sample and “ a deflector shared by the first and second incident electron beams for directing the first and second incident electron beams towards the first and second portion of the sample and directing the first and second detection electron beams output from the sample towards the detector.” Applicants respectfully traverse the rejection.

Applicants gratefully acknowledge the courtesy and cooperation of the examiner Vinh Nguyen in setting up and conducting a telephonic interview in this matter on January 16, 2004. Claim 1 was discussed in the context of FIGS. 1A, 1B, 2, and 3. No agreement was reached but the examiner agreed to further review this matter upon submission of the written response.

The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation (MPEP 2164.01). In rejecting the claim on enablement grounds, the examiner further commented that neither FIG. 1A nor FIG. 3 have support for the above recited combination, indicating in particular that the device of FIG. 1 does not have the first and second detectors and the device of FIG. 3 does not have polepieces to generate a magnetic focusing field. Applicant believes that a reading of the specification and FIGS. 1A, 1B, 2, and 3 provide enablement support for the claims to those of skill in the relevant arts. For example, FIG. 3 illustrates Schottky tips 302 directing electron beams to the wafer 320. Those of skill in the relevant arts would recognize Schottky tips as thermal field emission sources, i.e., one example of a cathode. Moreover, FIG. 3 illustrates a uniform magnetic field (B) depicted by magnetic field lines 304. If one of the questions raised by the examiner is how those uniform magnetic field lines are generated, the relationship between polepieces and those fields is addressed in several locations in the specification. For example, by referring to FIG. 1A and the accompanying

description in the specification, it is noted that the polepieces 104 generate a uniform magnetic field represented by lines 103, generated in the direction of the axis of the electron beam 106. Further, in reference to FIG. 6, the specification at pages 16, line 21 to page 17 line 5 describes the functioning of the polepieces over an array having multiple electron beams (such as the beams generated by the tips 302 in FIG. 3). FIG. 3 also shows the electrostatic deflection field 308 acting in a vector direction out of the drawing (page 13, lines 3-14). Thus, FIG. 3 in itself shows the multiple beams, multiple sources, multiple detectors, and uniform magnetic and deflection fields. Accordingly, for these reasons alone, applicants respectfully request withdrawal of the rejection.

FIGS. 1A, 1B, and 2 show the thermal field sources 105, multiple beams 106, deflector plates 114, 115 to provide a uniform electrostatic deflection field (page 12, lines 10 – 20). Although multiple detectors are not specifically identified FIGS. 1A, 1B, and 2, their function and location would be understood by those of skill in the art from the drawings showing the multiple beams 106. Moreover, the specification specifically indicates that the scope of the invention shown in FIGS. 1A, 1B, and 2 is intended to extend to multiple beam inspection arrays having as few as 2 or even 10,000 or more of each of the sources, beams, and detectors. Hence, applicants respectfully submit that the descriptions and illustrations pertinent to FIGS. 1-3, taken alone or in combination, indicate to one of skill in the relevant arts how to make and use the invention as defined in claim 1.

Applicant believes that in light of the foregoing explanation, one skilled in the art would therefore understand how to use and make the present invention by reading the specification. The specification need not teach and preferably omits what is well known in the art. MPEP 2164.01. Withdrawal of the rejection is respectfully requested.

Applicants are herewith resubmitting the references cited on PTO-1449 filed on or about 04/02/03 pursuant to the request of the examiner.

Conclusion

In view of the foregoing, Applicants believe that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

No fees are believed due in connection with the filing of this paper.

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP

A handwritten signature in black ink, appearing to read "Russell N. Swerdon", is written over the printed name.

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